Only to a minor degree, says Argyris. The problems attributed to capitalism are indigenous to and shared by all industrialized societies—capitalist, Socialist, and Communist alike. He also explains the reasons and tells what society can do to correct the current malfunctioning.

Is Capitalism the Culprit?

Chris Argyris

Some scholars assert that changing organizations in order to enhance the quality of life is a strategy that is doomed to failure because the forces that shape organizations are politico-economic ones—more specifically, forces inherent in the capitalist system. Unless the capitalist system is changed, behavioral scientists may simply be tinkering and hence may simply be the servants of the existing power elites.

Walter Nord and Max Pages, for example, criticize OD practitioners for not realizing that the capitalist system is a major cause of the human problems within organizations. A more comprehensive body of literature that makes a similar point is the work of the New Left economists. For example, Stephen Hymer and Frank Roosevelt diagnose America as "rotten at the roots" and say that at the heart of the problem is ". . . modern capitalism with its dualism between freedom in the marketplace and authoritarianism in the workplace." A central causal factor is the organizational hierarchy or pyramidal structure, with its associated qualities of specialization of work and dominant–submissive relationships.

This article presents an alternative view. The authoritarian organizational hierarchy contains key factors that are counterproductive to the quality of life within and outside the organization. However, the primary causes of the hierarchy are not political or economic. If we accept as given that organizations must be managed by the use of information and that human beings have information-processing capacities plus theories of action, we have to accept as a cor-

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ollary the pyramidal structure with many of its attendant human problems. There is a paradox: In order to take certain basic psychological human characteristics into account, organizations are designed and managed in ways that are detrimental to other basic human characteristics.

The assertion that psychological factors account for the pyramidal structure should not be interpreted as evidence that broader social, political, and economic factors are of no consequence. They do play a role but, as we shall see, that role is secondary.

Inconsistencies in the "Macro" View

The first step is to illustrate that the macro approach to the problem contains within itself important inconsistencies. To illustrate the point, let's examine the New Left position.

Scholars have noted that state Socialist societies have production characteristics similar to those of capitalist societies. Stephen A. Marglin's explanation that the top-down relationships in countries like Russia were consciously and deliberately caused by the Russians, who wanted to embrace the capitalist mode of production and organization, is incomplete because it does not explain why the Russians would consciously embrace a system they had explicitly rejected. The explanation by Samuel Bowles and Herbert Gintis that the state Socialist countries of Eastern Europe were never democratic, and that ruling elites have always maintained their power through top-down control of production, is also unsatisfactory because it does not tell us why this is true, nor why a basic socioeconomic change did not alter the elitist ideology.

Nor is the assertion that China is learning from the Russian errors supported by scholarly analysis. Franz Schurmann's study makes it clear that the Chinese believe in one-man leadership at the top of every plant. Schurmann quotes Liu Che: ". . . modern large-scale industry and dispersed management are incompatible." "The plant manager has the authority, within the framework of presently constituted law, to decide on all matters . . . for fulfilling and overfulfilling state plans." ". . . the plant manager is the fully authorized representative of the state, and is the one who assumes full and complete responsibility for all work in the plant." He concludes that a Chinese plant manager may have more unilateral authority for final decisions than his or her American counterpart because he or she can sometimes act in technically illegal ways to achieve overall goals at the plant.

A more recent description of Chinese policies and practices suggests that the Chinese and Western theories on participation may be converging and notes, for example, the deep mistrust by the Chinese of bureaucracy and elitism. The Chinese not only emphasize employee participation but they are also doing their best to de-emphasize specialization and professionalism, especially at the managerial levels. They prefer managers who are generalists and are politically pure to specialists who are remote from, and who tend to dominate, the employees.

But, as we examine more closely M. K. Whyte's descriptions of the quality of the participation these generalists produce, we wonder if it is not a new form of unilateral manipulation. For example, al-

I should like to thank Professors Lee Bolman, Bernard Cullen, Herbert Gintis, and Charlotte Kuh for their comments.

though decisions originate from above they are not supposed simply to be announced and obeyed. Yet elaborate procedures exist for mobilizing support "for decisions made at higher levels." Whenever a new policy is announced, subordinates break into regular discussion groups to go over each point in detail. "In these groups efforts are made (by the people above) to convince everyone of the need for a change in the routine, to elicit suggestions and ideas, and to get 'activists' to encourage their co-workers to support the change." Who are the activists? Whyte notes, "The group leader will cultivate within the group certain 'activists' whom he can count on to help him steer discussion and criticism meetings along proper channels."

Last, individuals are not to let personal emotions interfere with their performance. Unemotionality is not a goal, however; passion and zeal are expected even for the most mundane tasks so long as they are in the interests of goals established by superiors. Whyte concludes that Chinese participation may be characterized as top down and that in practice it may unintentionally suppress many subordinates' views.

William Brugger's analysis makes it clear that the Chinese and the Russians believe in the importance of centralized power but differ in how to achieve it. The Soviets expect the individual to be loyal to, and to be controlled by, a complex administrative hierarchy that begins within the firm and extends beyond it. The Chinese strategy is to politicize the small, informal group and to connect it with the hierarchy of the Party organization, which espouses participation so long as the participants do not question the underlying policies and assumptions of the Party.

Some economists and behavioral scientists cite Yugoslavia as a better example of the world they are proposing. The Yugoslavs believe that Russia and the United States are similar in that both systems allow an elite group to confiscate the profits (surplus capital) generated by individual plants and to use these profits to attain the goals of the centralized elite. Genuine self-management, the Yugoslavs maintain, does not require the employees to own the plant. Ownership is counterproductive to self-management because it hampers the mobility of labor and capital. The Yugoslavs believe that the key to genuine changes is to be found in a competitive market coupled with "genuine channels of decision making which enable all members to feel that they are contributing and that they can effectively master their immediate environment" (Ichak Adizes and Elizabeth Mann Borgese).

The Yugoslavs point out that the supposedly diametrically opposite external environments in the United States and Russia have the same impact on the internal management of enterprises. However, the Yugoslavs do not explain why the internal management of their enterprises appears to be the same as that in the United States and Russia. The Yugoslavs may deny this assertion and maintain that they are different, but the differences are more at the level of espoused theory than of practice. For example, their prescription for effective leadership includes:

The manager ". . . instills confidence in the constituents that the manager is not only in control of the situation but that he adequately expresses and implements the community's desires and aspirations"; the manager ". . . must be an entrepreneur, educate and lead the group into risk-taking"; "the central figure in participation is the plant manager," and "Without a manager who has the entrepreneurial spirit and directive leadership traits, the plant will probably fail and the workers will become depressed."

True, the workers can replace their manager. But what are the probabilities that this will happen if the workers become as dependent on their manager as the quotations above imply? Moreover, to have the power to dismiss the manager unilaterally is to give the workers the same top-down management that self-management is supposed to reject. Self-management may, in reality, be top-down management by a few who live under the continual threat that their power can be taken away from them. We can predict that the managers still strive to assure their survival by maintaining and perhaps magnifying the workers' dependence on them. A recent (1975) observational study of workers' councils in Yugoslavia found that the managers and the technocrats dominate the interactions and the conversations. The empirical research on employee control and influence by Arnold S. Tannenbaum and others suggests that the slopes of these curves do not differ markedly from those found in the West. Recent scholarly reviews of work and management in Poland confirm these findings.

We may conclude that the problems attributed to capitalism exist in non-capitalist as well as capitalist countries. Hence, some primary causal factors must be common to all these societies. They do exist, and they reside primarily within the organization. These include (a) the nature of human beings as information-processing systems, (b) the theories of action people hold about effective influence over others, and (c) the organizational learning systems that are created as a result of (a) and (b). In other words, I take the position that the negative consequences on the quality of life are caused primarily by factors within the organization, although they can be considered societal in the sense that they are common to most if not all industrialized societies.

Information Processing and the Pyramid

At a minimum, organizations require employees with the skills to produce a product or perform a service. How do people acquire and use skills? A skill is acquired by remembering and using the answer to previously solved problems and remembering and avoiding previous traps. Developing skills even for such simple activities as riding a bicycle is an extremely complex process for the human mind. According to Herbert Simon, the human capacity for information processing is quite limited in comparison to the demands of the environment in which it is embedded. Human beings have learned a skill when the program necessary to perform the requisite actions is so much a part of them that the control over the performance of the skill does not have to be conscious and explicit. They are then free to use their finite information-processing capacity for other kinds of problem solving.

But before people can use these skills effectively, the programs must be rigorously generalized and stored. Thus the workers not only make their skill-programs tacit, but once they do, they must make them rigid and not easily alterable. Otherwise they could not be performed without thinking. Only when errors are made do the programs become explicit, but then their rigidity must also be dealt with in correcting the programs.

So managers are faced with the task of monitoring employee actions guided by

programs that are hidden from the actor, yet ruthlessly generalized and tenaciously held. For example, a worker who has learned to use a machine has learned a highly complex program of skills. Once he has learned these skills, he must adhere to them rigorously or he will make errors. He cannot deviate from the program without getting into trouble. The manager is held responsible for the workers' performances, yet neither he nor the workers has direct access to the programs that produce the performance. Moreover, if corrections are necessary, some employees will hold on to their programs and resist these corrections. The manager is faced with a predicament. Errors will be charged against him, yet he (and the workers) may have great difficulty in discovering and correcting them.

The uncertainty created by the nature of human information processing is cumulated and expanded because managers are also finite information-processing systems. They, too, make their programs tacit and hold on to them tightly. Even with the capacity to make programs explicit, there is a limit to how much information they can cope with. Hence the need arises to monitor managers.

Although managerial control is necessarily incomplete, managerial responsibility for results is not. Managers must find ways to reduce the probability of error. One method is to simplify jobs. If a tacit and rigid program has to surface in order to be corrected, it should be as uncomplicated and basic as possible.

The second strategy is to define production or work standards and the tolerances for errors allowable in achieving these standards. If performance errors exceed tolerances, corrective managerial action must be taken. This strategy is called management by exception. At its core is the creation of gaps of knowledge about employee performance coupled with a continual sampling for errors. For example, the performance of employees is not monitored (hence gaps of knowledge) until error is observed (hence monitoring for error). Implicit in the effectiveness of management by exception is acceptance of the theory that managers need valid information only when workers deviate from standards. But since managers are finite and monitor the work of many human information processors, the data they obtain about the performance of their subordinates must be both comprehensive and manageable. Of necessity, therefore, they must also be abstract. The unique aspects of each situation must be ignored because they would make the data too complex to be useful.

So now we have workers with programs that are tacit, rigorously generalized, and difficult to control directly, and managers who use information that is abstracted from the unique situation for which they are responsible (for example, the weekly or monthly budget and production figures). The managers create their own tacit programs and hold on to them tenaciously. These managers must, in turn, be managed, and the problems of tacitness, incompleteness, and abstractness become replicated.

The managers who are most distant from the local level have the greatest responsibility for what happens at that level. In order to manage effectively, they, too, must design gaps in their knowledge while being held responsible for these very gaps. Hence the need to assure themselves that

they can institute programs to detect and correct error. One result is that power increases with distance from the local level.

We now have the beginnings of the pyramidal structure with the top-down unilateral controls. Nothing has been introduced into the argument yet about socioeconomic views of capitalism or state socialism.

Injustice Through Information

The pyramidal structure creates a continuum of information systems ranging from the local area where the service or product is produced to corporate headquarters, the point of ultimate control. These information systems are designed to detect and correct errors. But having authority to create programs to detect and correct errors is one thing; actually being able to do so is quite another. The information system designed to detect and correct errors has inherent properties that inhibit its effectiveness. Why? The characteristics of local management information systems (MIS) include:

- Concrete descriptions of the unique situations.
- Representations of the actual processes, whether they are rare or repeatable.
- Connections between the performance and the processes used.
- Implicitly rational logic—that is, the rules for defining categories, for making inferences, and for confirming or disconfirming evaluations are private.
- Tacit knowledge and tacit processes.

Such MIS may be effective for local management but they are also uneconomic for generalizations from one setting to many settings; unusable by people other than their creator (because they are not easily convertible, comparable, or precedent setting); uninformative about the general characteristics of settings; and incapable of validation by objective knowledge and objective procedures that go beyond the capacity of any given individual.

These limitations exist in the very areas in which top management requires valid information in order to identify important overall errors and to design and implement corrective actions. Therefore, if the top is to manage competently, it cannot depend directly on the MIS used at the local levels. Moreover, since the MIS tend to be private, intuitive, subjective, ungeneralizable, noncomparable, and non-trend setting, if the top based their MIS on these characteristics, they would find it difficult to do justice to it.

If top management is to manage through the use of information, the MIS must (1) contain abstract, quantitative descriptions of key performance indicators; (2) represent stable variance; (3) represent the results or the outputs of complex processes, and not the processes themselves; (4) contain explicitly rational logic that satisfies the logical systematic rules for defining categories, making inferences, and confirming or disproving evaluations publicly; and (5) exclude, as much as possible, tacit knowledge and tacit processes.

The financial reports that the top management receives should stipulate the monthly financial results with the probable variances of error, together with what information is included and what information is excluded. The above would go a long way toward correcting the defects typically found in local MIS and rendering them in a form that would provide information that is both topical and useful to top management.

Information systems with these properties can usually be generalized from one setting to many settings and tend to be informative about the general characteristics

Distant MIS induces individuals . . .	*Local MIS induces individuals . . .*
To think abstractly and rationally.	To think concretely and intuitively.
To conceptualize stable variance and general overall conditions and trends.	To conceptualize variable processes and specific conditions.
To distance themselves from processes that produce results, and focus primarily upon the results or the performance.	To become close to the processes that produce results, and focus on them as much as on the results.
To identify errors that are exceptional.	To identify errors and correct them before they become exceptional.
To infer causality from information that lacks the causal processes or mechanics.	To infer general causality from information rich with situational causality related to specific mechanisms.

of a setting. They also are capable of validation by objective knowledge and objective processes that go beyond the information-processing capacities of any individual and are usable by people other than their creators.

The characteristics of distant and local MIS emphasize different ways of thinking, different ways of dealing with people, different concepts of dealing with causality, and, above all, different conceptions of how order is defined and managed. The accompanying box spells out some of the differences.

Admittedly, my discussion and the box polarize the characteristics of distant and local MIS. In reality, there is a continuum of abstraction; the top is the most and the local the least abstract. The exact nature and consequences of this continuum will have to be determined by empirical research.

Distant MIS tend to reward abstract conceptualization, impartiality, publicly verifiable rationality, distance from individual cases, and inference of personal responsibility from abstract data and overall trends. Local MIS tend to reward concrete thinking, intuition, privately verifiable rationality, closeness to the individual case, and inference of personal responsibility from concrete, specific processes.

People who spend long periods of time in either of these worlds may come to hold different conceptions of responsibility, competence, causality, and the requirements for effective order. And their sense of justice may be a function of these conceptions.

For example, we learn by observing the operations of our courts that justice requires all parties to have equal access to the same information and equal opportunity to confirm or disprove it. Yet top managers have access to different information from local managers; the local people rarely have the opportunity to confront the information used by the top; and even if they were to have such an opportunity, they would probably not have the information-processing competence required to deal with it effectively. Justice also requires errors to be directly and unambiguously linked to individuals' actions (the smoking gun). But top MIS do not conform to such rules of evidence.

The sheer information-processing requirements and the costs necessary to assure minimal misunderstanding and injustice

may be so high that such assurances are not possible. Employees who are responsible and loyal understand these constraints but, in doing so, place themselves in a dilemma. If they accept the high probability of injustice as necessary, they have acted to legitimize injustice. On the other hand, if they do not accept the necessity of injustice, they can be seen as disloyal. Those at the upper levels may find it necessary to defend themselves from the dilemma of having to be unjust to make the organization effective.

How do people deal with their exposure to necessary injustice? Some possible adaptive activities at the lower levels are:

1. They may consider the basis for, and the meaning of, justice to be embedded in the nature of their type of MIS. But such an action leaves them open to potential conflict with the top because, as we have suggested above, each MIS implies a different conception of order.

2. They may reduce their risks by withholding information or sending doctored information upward.

3. They may reduce the tension of living in a world of unpredictable and uncontrollable injustice by withdrawing their energies and commitments, thereby also reducing their sense of personal responsibility.

Reactions such as these lessen the probability that the top will get the information it needs and the commitment it desires from the lower levels to enable it to manage effectively.

Top management may then strive to make the MIS more complete and more detailed, tamperproof, and more oriented toward unilateral control over others. These reactions would probably lead to a reduction of the gaps permitted by the top and an increase in the frequency of its interventions at the lower levels.

To compound the top's problem is the previously stated possibility that it may be forced to be unjust even when it does not wish to be. It may react to this possibility by developing attitudes and values to justify its actions. It may claim that it must be tough. As one president said to me, "Five percent of the people work; ten percent think they work; and eighty-five percent would rather die than work." Another common set of attitudes is that lower-level managers and employees can be trusted only to the extent that they can be monitored.

These attitudes and values, combined with top management's reactions as described above, may lead to at least three counterproductive tendencies:

1. The lower-level managers may become more fearful, take fewer risks, and increase their protective activities.

2. These actions, in turn, may increase top management's intervention into the local MIS. Confusion could follow because the properties of the top MIS are incongruent with the properties of the local MIS.

3. They may also increase the probability that the subordinates will attempt to turn the top MIS into a way of getting even with, or generating some control over, top management. For example, air traffic controllers can strike simply by following the defined procedures rigorously.

To summarize: In order to manage through the use of information, it becomes necessary for the top to manage with incomplete information. Management by optimal gaps may be a critical characteristic of effective management. The gaps are managed by making the lower levels responsible for them and by the top intervening when standards are not met. If such management is to be effective, each level must use an MIS that has significantly different properties from each other. Different conceptions of respon-

sibility, competence, and order evolve that, in turn, may influence each group's view of justice. Each group protects itself against being accused of being unjust by creating protective activities that reinforce the factors causing the problem in the first place.

The employee group, with whom I would group the lower-level managers, eventually come to recognize that management information systems are being used to buttress the traditional view of unilateral management. At this point employees may begin to resist or even, in some instances, to sabotage (carefully) these systems. Management information systems, as I have pointed out, have become to managers at all levels what the time-study people have been to managers in the past—objects of fear, mistrust, and intense dislike.

O-I Learning Systems

If the above is true, it follows that organizations primarily have the capacity to learn those lessons that are self-sealing because they maintain the status quo. Such organizations have what I have labeled an O-I learning system, described below. It is important to examine this and other possible organizational learning systems closely.

Error is any feature of knowledge or of knowing that makes inquiry for action ineffective. Error is a condition of mismatch. The first condition for learning is the detection and correction of error. The second condition for learning is match; that is, the ability to create conditions that match plans and expectations with effective action.

Organizations, Donald Schon and I believe, learn through individuals who act as agents for them. The individuals' learning activities, in turn, are facilitated or inhibited by an ecological system of factors that we have called an organizational learning system.

When the learning system is only adequate enough to enable the organization to implement its existing policies and meet its stated objectives, the process at work is what Schon and I call single-loop—or Model I—learning. It is like the thermostat that receives information about the temperature of the room and can turn the heat on or off if it is too hot or too cold.

Double-loop—or Model II—learning, by contrast, performs the more difficult and comprehensive task of questioning un-

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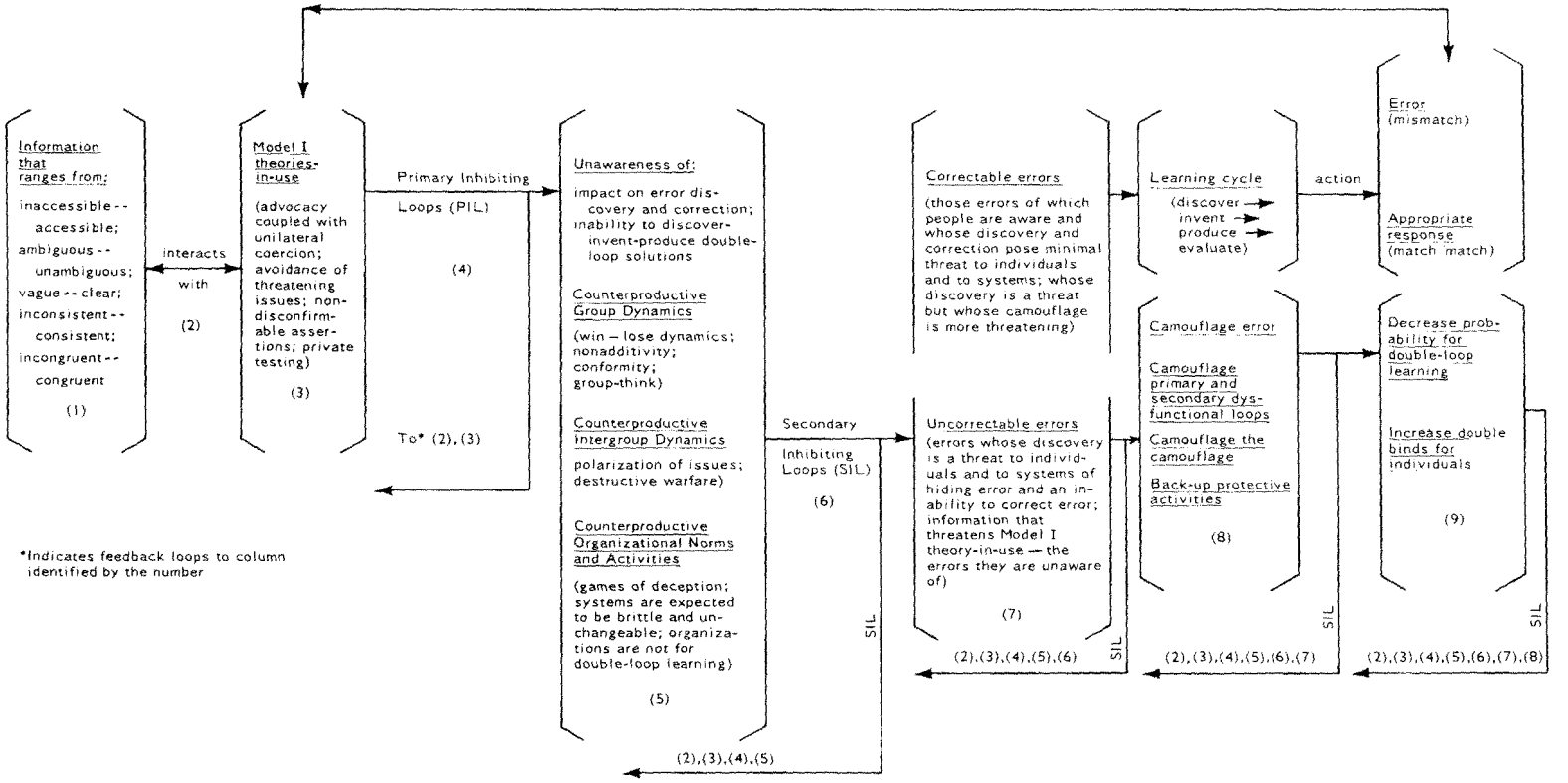
"In order to manage through the use of information, it becomes necessary for the top to manage with incomplete information. Management by optimal gaps may be a critical characteristic of effective management."

Figure 1

MODEL 0-I: ORGANIZATIONAL LEARNING SYSTEMS THAT INHIBIT ERROR DETECTION AND CORRECTION



derlying goals and assumptions. It is as if the thermostat were capable of asking itself whether it should be set at 68 degrees. In single-loop learning, for example, you might debate what could be done to improve the profit picture in a nonprofitable division that was considered the president's pet project and hence not discussable. In double-loop learning, you could confront the problem head on and decide to discontinue the operation of the nonprofitable division.

Figure 1 represents a model of the learning system that, to date, mirrors the conditions in all the organizations we have studied. This is an organizational learning system that is related to Model I; hence we call it the O-I learning system. The model begins with inputs of information. The substance of the information is irrelevant. The quality of the information is highly relevant; it may vary from inaccessible to accessible, ambiguous to unambiguous, vague to clear, inconsistent to consistent, and incongruent to congruent.

When such information interacts with people using Model I theories-in-use, a primary inhibiting loop for learning is created, because the tendency of these people will be to reinforce whatever degree of inaccessibility, ambiguity, vagueness, and inconsistency already exists in the information. By inhibiting loop, I mean simply that the consequences of the interaction between columns (1) and (3) of Figure 1 are loops that tend to maintain and reinforce the original conditions that produce error. Feedback is positive in that it reinforces the original qualities of the information; it is not corrective. (Feedback is represented by arrows that return to a previous condition.)

What is a Model I theory-in-use? The behavior of people is determined by the theories of action they carry around in their heads. Espoused theories of action are the theories that people report as governing their actions. Theories-in-use, by contrast, are the theories that actually govern their actions. Most people studied so far manifest remarkably similar theories-in-use, no matter what theories they espouse. Therefore, these theories can be put in the form of a model, which we have identified as Model I.

Model I theories-in-use are theories of top-down, unilateral control over others that enable individuals to win, not lose; and to be effective by controlling the environment in which they exist. But we can show that Model I theories-in-use lead to effective problem solving primarily for issues that do not require questioning of their underlying assumptions (single-loop learning). Model I theories-in-use do not make it possible for

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"The O-I learning system... begins with inputs of information. The substance of the information is irrelevant. The quality of the information is highly relevant...."

people to develop problem-solving skills that question the theories' governing values (double-loop learning).

I am asserting that people studied so far manifest similar theories-in-use, which are oriented toward unilateral control and lead to single-loop learning. There are four consequences, all unfortunate (Column 5). People tend to be unaware of their impact on error discovery and correction. If *A* makes an error and others tend to hide the impact it has on them, *A* will be unaware of the impact. People tend to be unaware that they are unable to discover–invent–produce genuinely corrective solutions to problems. And there are defensive group dynamics, with little additional problem solving, low openness and trust, and high conformity and covering up of threatening issues. Counterproductive intergroup dynamics is another negative outcome.

These four results create secondary inhibiting loops, so called because they come out of interaction with the primary inhibiting loops. Secondary inhibiting loops also feed back to reinforce the primary inhibiting loops and the previous conditions that predispose to error (Columns 2, 3, 4, and 5).

What kinds of errors tend to be correctable or uncorrectable under these conditions? Errors that tend to be correctable (see top of Column 7) include those whose existence is known and available to the participants, whose discovery and correction pose a minimal threat to them, or whose discovery and correction are threatening but whose camouflage or noncorrection is more threatening (Column 6).

Errors that tend not to be correctable (see bottom of Column 7) include those whose discovery is a threat to the person's system of hiding error, those that reinforce primary inhibiting loops because they are threatening Model I values (win-don't lose, suppress feelings, and so forth), and those whose correction violates organizational norms. They are camouflaged, the primary and secondary inhibiting loops associated with them are camouflaged, or the camouflage is camouflaged, with the development of such protective activities as "j.i.c." (just in case the superiors ask) files (Column 8).

Or again, a norm usually associated with Model I theories of action is that "you cannot openly confront norms that tell you not to confront policies and objectives." In other words, in order to maintain the first norm a lot of information about error hiding would have to be camouflaged. We find norms within norms that prevent double-loop learning. Once more, the conditions described in Columns 7 and 8 feed back to reinforce the previous conditions.

The conditions described in Column 8 also tend to increase the predisposition to competitive win–lose games, deception, and the avoidance of risks. They strengthen the tendency of participants to assert that their organizations are brittle and unchangeable, and increase their conviction that organizations are not designed for double-loop learning (Column 9). These conditions feed back to reinforce the previous error-producing conditions and simultaneously reduce the probability that the organization will examine rigorously the proc-

esses by which it examines and evaluates its performance.

And the cycle of reinforcement begins again. Every time the previous conditions are reinforced, the consequences are also reinforced. Hence, we have a system in which no one is very likely to learn except when dealing with problems that are correctable (top of Column 7). The participants will tend to experience double binds. If they go by the system, they will learn very little about issues that question the underlying objectives and policies. If they think at all about changing the system, they will tend to consider it a task that is both foolhardy and a threat to their survival,

In the last two sections, I concluded that inherent in using information to manage organizations are two interdependent worlds —one predisposed to escalating error and the other to escalating injustice. In this section I conclude that organizations manifest learning systems that inhibit the detection and correction of errors when admitting the errors would lead to questioning the existing O-I learning system. Hence, organizations find it hard to correct factors that inhibit critical learning.

None of these generalizations is limited to a particular political economic system. They should all hold true in any type of economy, at least in any economy that meets the following conditions: (a) people (with finite information-processing capacities) are used as agents of the organization, (b) information is used to manage the organization, and (c) the people hold Model I theories-in-use.

Deep Versus Superficial Change

Let us now return to the Yugoslavian experience. Recall that the government has given decision-making power to the workers, but genuine self-management has not taken place. The reason, I suggest, is that the Yugoslavs use a theory of management that is congruent with Models I and O-I. Thus they may espouse genuine worker control by the individual, but the organizational theories-in-use will not permit such management. I believe that the same explanation holds for the Chinese and the Russians. They have assumed that by creating structural changes in factors such as ownership they will solve the problems embedded in the relationships between people and organizations that I have identified. Since this is not possible, they, too, will continue to have their inner contradictions increase in scope and intensity.

If people do not possess the skills for effective participation—if they are predisposed to repeat error, to camouflage the noncorrection of error, and to feel dependent and submissive—it is understandable that pyramidal structures, specialization of work, and top-down management perpetuate themselves. Indeed, it is predictable that they will characterize all industrialized nations that use complex systems to produce products and services. We can only conclude that the features of organizations some scholars attribute to capitalism are endemic to all organizations.

Apparently Marx was not unaware

of this possibility. He realized that the quality of life would not be enriched simply by turning over the ownership of businesses to employees or by giving them higher wages. He apparently believed—as the Chinese still believe—that the mundane can be overcome by the worker identifying with higher Socialist goals. For example, Nord quotes him as saying, "Involvement tends to be developed through relating the individual mundane work to its impact on the future of socialism and communism." This view may offer a partial explanation of why the Socialist–Communist countries have not been leaders in such changes as job enrichment and autonomous work groups.

Some scholars maintain that job enrichment and autonomous groups are simply devices for tinkering with the system. The problem is to define the basic system to be changed. It is my thesis that basic changes must begin with the Model I theories-in-use and the O-I learning system. I believe that the Socialist–Communist societies do not wish to alter these factors. One reason may be that Model II and O-II learning systems foster double-loop learning. People who master such learning are prone to question underlying assumptions, goals, and plans, while the quotations cited earlier clearly indicate that such questioning is not permissible in the Socialist–Communist nations.

Changing ownership is trivial compared with changing peoples' capacities to learn. The former can be accomplished without necessarily threatening those in power. The latter is a recipe for reflection and confrontation that, since it can lead to the questioning of underlying assumptions, is feared by those in power, no matter what political philosophy they advocate.

Evidence is beginning to surface that middle and lower management is beginning to resist some job-enrichment and autonomous-groups experiments in the United States because the very success of the programs threatens their traditional functions. Moreover, employees may also resist the same type of programs when they face a new set of challenges. For example, Richard Walton revisited the General Foods plant that was one of the first to install job enrichment and autonomous groups. He found that the work performance and the commitment were still very high. However, he also found that management and workers had difficulty in dealing with what appeared to be double-loop problems. For example, workers were having difficulty confronting the poor performance of fellow workers. They were also finding it hard to reduce the wages of poor performers. Although some employees felt abandoned by managers who had left to go to new plants, they did not discuss these feelings before the transfers took place. And middle managers, by and large, resisted further expansion of the concepts in other parts of the company because of the threat it posed to their role.

Ana Johnson and William F. Whyte have described successful workers' cooperatives in Spain that have many of the characteristics of self-management systems (for example, they elect their leaders and make decisions about production, investment, and expansion activities). These cooperatives have exhibited an enviable record in terms of employee performance and involvement.

Johnson and Whyte point out that one of the reasons these cooperatives have worked in the past is that they could build on a Basque cultural phenomenon of male groups (about 2,500 of them with a total of 35,000 members). These groups exhibit a high degree of cohesion and trust among the

Chris Argyris *is James Bryant Conant professor of education and organizational behavior, Graduate Schools of Education and Business Administration, Harvard University. Formerly at Yale University, he has combined teaching and research with an active consulting career, serving in that capacity the State Department, National Science Foundation, Ford Foundation, Department of Health, Education and Welfare, National Institute of Mental Health, numerous business firms, and the governments of France, England, Norway, Sweden, Holland, Italy, Greece, and Germany on the problems of executive development and productivity. In addition, he is the author of 20 books and monographs and over 125 articles. In 1977 Professor Argyris was the recipient of an honorary LL.D. from McGill University.*

members. Another important reason is that most of the cooperatives themselves have been kept small in size.

Recently, in one of the larger cooperatives, difficulties began to arise that required double-loop problem solving, but single-loop problem solving was used. For example, some workers attempted to fight the Taylor-type piece-rate system. Engineers made the studies that led to the changes that were considered objectionable. Typically, they acted unilaterally and did not consult with the people affected. When some employees struck to protest the changes, they were fired. The entire worker population protested the dismissals.

It appears that the worker cooperatives operated relatively effectively as long as the issues to be resolved were unrelated to their underlying norms and policies. When norms and policies (for example, piece rates and wage differentials) were questioned, double-loop problem-solving capacity was not available.

None of the points above addresses itself to the issues of how capitalists or Socialist bureaucrats cope with the surplus capital that is produced in the plants in each country. Nor does our approach say anything about the just way to divide the surplus capital. We predict that Socialist societies, where social justice is an explicit objective, will not go any further than other societies in resolving these problems because their organizations contain the same inner contradictions; their people are programmed with Model I theories-in-use that create organizations with Model O-I learning systems.

When scholars support Marxist theory by stating that "human development requires man to exercise control over his actions, but achievement of that condition requires that control be shared by everyone" (Nord), it is important for them to develop a map of how to get from here to there. When Marx states, "The only way for individuals to control modern universal interaction is to make it subject to the control of all," a map must be drawn showing how everybody is to be able to control the activities of everyone else. Without these maps change simply will not take place.

A Suggested Solution

If the analysis above is valid, the built-in structural contradictions within organizations are not likely to be eliminated. The task,

therefore, is to generate organizational problem-solving processes that can deal with the dilemmas, conflicts, and tensions created by these inner contradictions.

This is unlikely to happen unless people are helped to learn theories-in-use that they can use to design primary loops that facilitate learning, especially double-loop learning. And one such theory-in-use, Model II, has been developed by Argyris and Schon. Very briefly, the governing variables of Model II are valid information, informed choice, and internal commitment to the choice so that its implementation can be monitored continuously by all the participants involved. The behavioral strategies include advocacy, but advocacy coupled with inquiry. Control over the task, purpose, and environment is given to those who are involved and have the knowledge and the competence to contribute to the solution of problems that arise. The emphasis is on publicly disprovable activities and double-loop learning.

People who are capable of double-loop learning are able to deal with such conditions of error as incongruence, inconsistency, lack of clarity, and ambiguity by confronting them constructively and reducing them. Therefore, they tend to create primary loops that facilitate learning. The consequence should be an organizational learning system that encourages double-loop learning and reduces the games and the double binds described in Model O-I, what Donald Schon and I have called an O-II learning system.

Unless such learning systems are created, the dysfunctionalities sometimes attributed to capitalist systems will be found in all existing political modes. Also, giving ownership to employees is counterproductive, if not cruel, because it makes workers legally responsible for the dysfunctional consequences that neither they nor their leaders are educated to correct.

How does Model II promote double-loop learning? By encouraging the generation of valid information. This valid information makes dilemmas recognizable, which, in turn, creates the tensions required to resolve them. In short, these tensions motivate learning.

Model II, although it represents a different and higher form of learning than Model I, does not represent a clear break with Model I; instead, they are on a continuum. Model I, for example, emphasizes that individuals be as articulate as they can about their purposes, goals, and so forth, in order to help realize these goals; simultaneously, these individuals control others and manipulate the environment to achieve these goals.

Model II does not reject the skill or competence to be articulate and precise about one's purposes. The difference is that Model II rejects the unilateral control that usually accompanies advocacy because the typical purpose of advocacy is to win. Model II combines articulateness and advocacy with an invitation to other people to confront these views, to alter them in order to emerge with the position that is based on the most valid information to which the people involved can become internally committed.

How attainable is Model II? Is a Model II organization possible? At one level, Model II is admittedly an ideal, something to which we can aspire but rarely expect to reach. At the same time my experience with six presidents, the first such experience anywhere to my knowledge, shows that over a three- to five-year period, with an intense commitment, a lot of false starts, and massive doses of professional assistance, Model II can at least be approximated.

I say "approximated" because even

in AA Stores, an organization that has moved as close to that goal as any organization, the question is still unanswered. There is still much work to be done. The managers have not reached the point at which they routinely apply the governing variables of Model II to many of the really difficult problems faced by the business. They have only begun to face the problems of redesigning organizational structures and control systems to make them congruent with Model II variables.

And no wonder. To create a learning environment conducive to corporate growth the six presidents had to make two profound changes: First, they had to enlarge their own roles to incorporate the role of educator or interviewer, to help their key subordinates to explore their theories in use, and to identify the dysfunctional aspects of their relationships with each other and with the presidents. Second, they had to change the living system. Model II can never be a living concern as long as competitive win–lose, low risk-taking interactions are rewarded and cooperative problem-solving, high risk-taking interventions are suppressed.

It's in this second area that the six presidents still have a distance to go. On the other hand, they all concur that when Model II theories-in-use are used effectively, they have helped to produce better decisions within the most difficult problem-solving areas in the organization, areas such as drastic cost cutting, reorganization, relieving a chief executive officer, recognizing an Edsel, and recognizing the ineffectiveness of a corporate division. In other words, those organizations that have partially achieved Model II have found that the achievement has had important and positive consequences.

Selected Bibliography

Stephen A. Marglin's "What Do Bosses Do: Part I" (*Review of Radical Political Economics,* Vol. VI, No. 2, 1974), and Samuel Bowles and Herbert Gintis's *Schooling in Capitalist America* (Basic Books, 1976) are two thoughtful criticisms of modern industrialist societies. Oscar Lindbeck's *The Political Economy of the New Left* (Harper & Row, 1971) is a valuable response to the work of the New Left economists.

Organizational Learning, by Donald Schon and myself (Addison-Wesley, 1978), attempts to present a view of how organizations learn and an intervention strategy to enhance organizational double-loop learning. My *Increasing Leadership Effectiveness* (Wiley-Interscience, 1976) is a description of how six presidents moved from Model I to Model II and the impact this move had on their respective organizations.

A previous article in *Organizational Dynamics* by Schon, "Deutro-Learning in Organizations: Learning for Increased Effectiveness" (Summer 1975, pp. 2–16), describes the conceptual background of the various ideas that entered into the development of Model II. An article by Karl E. Weick in a recent issue of *Organizational Dynamics,* "Organizational Design: Organizations as Self-Designing Systems" (Autumn 1977, pp. 31–46), holds that effective organization learning is, of necessity, internally generated because the processes of design and implementation are inextricably intertwined.